

# PATENT ABSTRACTS OF JAPAN

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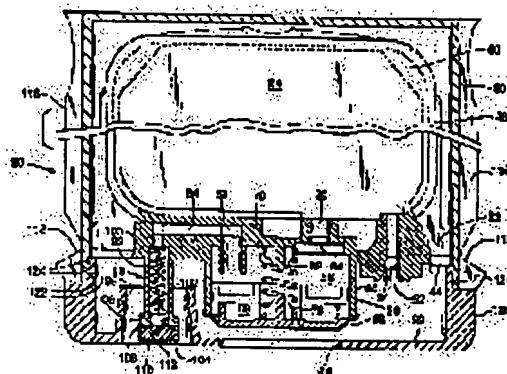
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## (54) SELF-SEALING TYPE FLUID CONNECTION WITH DOUBLE SEAL DIAPHRAGM

### (57)Abstract:

PROBLEM TO BE SOLVED: To prevent leakage of ink or entry of air bubbles into an ink passage when an ink cartridge is attached to/detached from a printer.

SOLUTION: Before a cartridge 20 is inserted to a printer, a ball 102 is pressed to a slit 110 of an elastic diaphragm 104 at a front end of a fluid discharge port 28, and therefore the discharge port is tightly sealed to liquid. A hole 168 at a front end part of a hollow needle 162 in a fluid entrance 42 at the side of the printer where the ink flows is shut by an upper part of a sliding collar part 170, and an ink passage at the side of the printer is also sealed to liquid. When the cartridge 20 is inserted further, the front end of the discharge port presses an upper face of the sliding collar part 170 downward, thereby lowering the collar part. As a result, the hollow needle penetrates the slit of the diaphragm, whereby the ball is pressed up and the ink in the cartridge is coupled to the printer via the hole at the front end part of the hollow needle.



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### LEGAL STATUS

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